



RECEIVED

JUL 25 2003

TECH CENTER 1600/2900

34506104.ST25.txt  
SEQUENCE LISTING

<110> Niles, Andrew  
Maffitt, Mark  
Haak-Frendscho, Mary

<120> RECOMBINANT PROTEOLYTIC TRYPTASES, ACTIVE SITE MUTANTS THEREOF, AND METHODS OF MAKING SAME

<130> 34506.104

<140> 09/598,982  
<141> 2000-06-21

<150> 09/079,970  
<151> 1998-04-15

<160> 52

<170> PatentIn version 3.1

<210> 1  
<211> 735  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(735)  
<223>

ai

```

<400> 1
atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg      48
Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val
1                               5                               10                               15

agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc      96
Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser
                20                               25                               30

ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg      144
Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro
                35                               40                               45

gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac      192
Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His
                50                               55                               60

ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac      240
Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His
65                               70                               75                               80

cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag      288
Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu
                85                               90                               95

ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg      336

```

## 34506104.ST25.txt

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc cag ggc 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 2  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 2

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

## 34506104.ST25.txt

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 3  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 3  
 gggcccctcg agaaaagaat cgtcgggggt caggaggccc 40

<210> 4  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 4  
 ccactatgtc cccaaaaagc cgtgaagcgg ccgccgtcgt 40

<210> 5  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 5  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gac atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly



65

70

75

80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
245

<210> 7

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Mutagenesis oligonucleotide

<400> 7

gaggagccgg tgaaggtctc cagccac

27

34506104.ST25.txt

<210> 8  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 8  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gac atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
 130 135 140

ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
 145 150 155

aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc ccg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190

## 34506104.ST25.txt

agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220

gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235

gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
 Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
 240 245

<210> 9

<211> 249

<212> PRT

<213> Homo sapiens

<400> 9

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140



34506104.ST25.txt

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 10  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 10  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240

## 34506104.ST25.txt

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aag gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125  
 ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Phe Pro  
 130 135 140  
 ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160  
 aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175  
 gac gac atg ctg tgt gcc ggg aac acc ccg agg gac tca tgc cag ggc 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190  
 gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205  
 gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220  
 ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240  
 gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 11  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 11

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

## 34506104.ST25.txt

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 12  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Mutagenesis oligonucleotide  
  
 <400> 12  
 gtgctgaccg cgcggcgtg cgtgggaccg gac 33

<210> 13  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Mutagenesis oligonucleotide  
  
 <400> 13  
 gtccggtccc acgcagccg cggcggtcag cac 33

<210> 14  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Mutagenesis oligonucleotide  
  
 <400> 14  
 gcccagatcg gagcggcaat cgccctgctg gag 33

<210> 15  
 <211> 33  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Mutagenesis oligonucleotide  
  
 <400> 15  
 ctccagcagg gcgattgccg ctccgatctg ggc 33

<210> 16  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Mutagenesis oligonucleotide  
  
 <400> 16  
 tgtcaaggcg acgccggcgg acctctggtg 30

<210> 17  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Mutagenesis oligonucleotide

<400> 17  
 caccagaggt ccgccggcgt cgccttgaca 30

<210> 18  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Mutagenesis oligonucleotide

<400> 18  
 caaggagacg ccggcggacc actggtgt 28

<210> 19  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Mutagenesis oligonucleotide

<400> 19  
 gcacaccagg ggcccgccgg cgtcgccctg gcatga 36

<210> 20  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 20  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gcc 144

## 34506104.ST25.txt

His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45  
 gcg gcg tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala Ala Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60  
 caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75  
 agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90  
 gac atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His  
 95 100 105 110  
 gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125  
 atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
 130 135 140  
 ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
 145 150 155  
 aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170  
 gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc ccg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190  
 agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205  
 aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220  
 gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235  
 gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
 Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
 240 245

<210> 21  
 <211> 249  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 21

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala  
35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His  
100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
210 215 220

34506104.ST25.txt

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 22  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 22  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gca atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac 336  
 Ala Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
 130 135 140

ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
 Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu



## 34506104.ST25.txt

145

150

155

aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190

agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220

gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235

gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
 Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
 240 245

&lt;210&gt; 23

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His

100

105

110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 24  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 24  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

100

105

110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 24  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 24  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

## 34506104.ST25.txt

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
80 85 90

gac atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac 336  
Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His  
95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
130 135 140

ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
145 150 155

aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc ccg 576  
Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
175 180 185 190

agg gac tca tgt caa ggc gac gcc ggc gga cct ctg gtg tgc aag gtg 624  
Arg Asp Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val  
195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
210 215 220

gcc cag ccc aac ccg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
225 230 235

gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
240 245

&lt;210&gt; 25

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 25

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 26  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 26  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gac atc gcc ctg ctg gag ctg gag gag ccg gtg aag gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
 130 135 140

ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480

## 34506104.ST25.txt

Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
 145 150 155  
 aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
 Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
 160 165 170  
 gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg 576  
 Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
 175 180 185 190  
 agg gac tca tgc caa gga gac gcc ggc gga cca ctg gtg tgc aag gtg 624  
 Arg Asp Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val  
 195 200 205  
 aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
 Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
 210 215 220  
 gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
 Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
 225 230 235  
 gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt 771  
 Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
 240 245

<210> 27  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 27

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

34506104.ST25.txt

Ala Leu Leu Glu Leu Glu Glu Pro Val Lys Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 28  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 28  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30



## 34506104.ST25.txt

|   |     |
|---|-----|
| ctc atc cac ccc cag tgg gtg ctg acc gcc gcg gcg tgc gtg gga ccg<br>Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala Cys Val Gly Pro<br>35 40 45        | 144 |
| gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac<br>Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His<br>50 55 60        | 192 |
| ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac<br>Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His<br>65 70 75 80     | 240 |
| cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag<br>Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu<br>85 90 95        | 288 |
| ctg gag gag ccg gtg aag gtc tcc agc cac gtc cac acg gtc acc ctg<br>Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu<br>100 105 110     | 336 |
| ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act<br>Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr<br>115 120 125     | 384 |
| ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct<br>Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro<br>130 135 140     | 432 |
| ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca<br>Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala<br>145 150 155 160 | 480 |
| aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt<br>Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg<br>165 170 175     | 528 |
| gac gac atg ctg tgt gcc ggg aac acc ccg agg gac tca tgc cag ggc<br>Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly<br>180 185 190     | 576 |
| gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag<br>Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln<br>195 200 205     | 624 |
| gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac ccg cct<br>Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro<br>210 215 220     | 672 |
| ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat<br>Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr<br>225 230 235 240 | 720 |
| gtc ccc aaa aag ccg<br>Val Pro Lys Lys Pro<br>245   | 735 |

<211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 29

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro

210

215

220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 30  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 30  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15  
 agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
 gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gca atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aag gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125  
 ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

34506104.ST25.txt

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc cag ggc 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 31  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 31

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu  
 85 90 95

34506104.ST25.txt

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 32  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 32  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser

| 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ctc | atc | cac | ccc | cag | tgg | gtg | ctg | acc | gca | gcg | cac | tgc | gtg | gga | ccg | 144 |
| Leu | Ile | His | Pro | Gln | Trp | Val | Leu | Thr | Ala | Ala | His | Cys | Val | Gly | Pro |     |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |
| gac | gtc | aag | gat | ctg | gcc | gcc | ctc | agg | gtg | caa | ctg | cgg | gag | cag | cac | 192 |
| Asp | Val | Lys | Asp | Leu | Ala | Ala | Leu | Arg | Val | Gln | Leu | Arg | Glu | Gln | His |     |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |     |
| ctc | tac | tac | cag | gac | cag | ctg | ctg | ccg | gtc | agc | agg | atc | atc | gtg | cac | 240 |
| Leu | Tyr | Tyr | Gln | Asp | Gln | Leu | Leu | Pro | Val | Ser | Arg | Ile | Ile | Val | His |     |
|     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |     |
| cca | cag | ttc | tac | acc | gcc | cag | atc | gga | gcg | gac | atc | gcc | ctg | ctg | gag | 288 |
| Pro | Gln | Phe | Tyr | Thr | Ala | Gln | Ile | Gly | Ala | Asp | Ile | Ala | Leu | Leu | Glu |     |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| ctg | gag | gag | ccg | gtg | aag | gtc | tcc | agc | cac | gtc | cac | acg | gtc | acc | ctg | 336 |
| Leu | Glu | Glu | Pro | Val | Lys | Val | Ser | Ser | His | Val | His | Thr | Val | Thr | Leu |     |
|     |     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| ccc | cct | gcc | tca | gag | acc | ttc | ccc | ccg | ggg | atg | ccg | tgc | tgg | gtc | act | 384 |
| Pro | Pro | Ala | Ser | Glu | Thr | Phe | Pro | Pro | Gly | Met | Pro | Cys | Trp | Val | Thr |     |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |
| ggc | tgg | ggc | gat | gtg | gac | aat | gat | gag | cgc | ctc | cca | ccg | cca | ttt | cct | 432 |
| Gly | Trp | Gly | Asp | Val | Asp | Asn | Asp | Glu | Arg | Leu | Pro | Pro | Pro | Phe | Pro |     |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |     |
| ctg | aag | cag | gtg | aag | gtc | ccc | ata | atg | gaa | aac | cac | att | tgt | gac | gca | 480 |
| Leu | Lys | Gln | Val | Lys | Val | Pro | Ile | Met | Glu | Asn | His | Ile | Cys | Asp | Ala |     |
|     | 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |     |
| aaa | tac | cac | ctt | ggc | gcc | tac | acg | gga | gac | gac | gtc | cgc | atc | gtc | cg  | 528 |
| Lys | Tyr | His | Leu | Gly | Ala | Tyr | Thr | Gly | Asp | Asp | Val | Arg | Ile | Val | Arg |     |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| gac | gac | atg | ctg | tgt | gcc | ggg | aac | acc | cg  | agg | gac | tca | tgt | caa | ggc | 576 |
| Asp | Asp | Met | Leu | Cys | Ala | Gly | Asn | Thr | Arg | Arg | Asp | Ser | Cys | Gln | Gly |     |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| gac | gcc | ggc | gga | cct | ctg | gtg | tgc | aag | gtg | aat | ggc | acc | tgg | ctg | cag | 624 |
| Asp | Ala | Gly | Gly | Pro | Leu | Val | Cys | Lys | Val | Asn | Gly | Thr | Trp | Leu | Gln |     |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| gcg | ggc | gtg | gtc | agc | tgg | ggc | gag | ggc | tgt | gcc | cag | ccc | aac | cg  | cct | 672 |
| Ala | Gly | Val | Val | Ser | Trp | Gly | Glu | Gly | Cys | Ala | Gln | Pro | Asn | Arg | Pro |     |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |
| ggc | atc | tac | acc | cg  | gtc | acc | tac | tac | ttg | gac | tgg | atc | cac | cac | tat | 720 |
| Gly | Ile | Tyr | Thr | Arg | Val | Thr | Tyr | Tyr | Leu | Asp | Trp | Ile | His | His | Tyr |     |
|     | 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |     |
| gtc | ccc | aaa | aag | ccg |     |     |     |     |     |     |     |     |     |     |     | 735 |
| Val | Pro | Lys | Lys | Pro |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 245 |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 33  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 33

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

34506104.ST25.txt

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 34  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 34  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15  
 agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
 gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aag gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125  
 ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140



34506104.ST25.txt

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc caa gga 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac gcc ggc gga cca ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 35  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 35

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Lys Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 36  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 36  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96

## 34506104.ST25.txt

|     |     |     |     |     |     |     |     |     |     |     |            |           |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|-----------|-----|-----|-----|-----|
| Lys | Trp | Pro | Trp | Gln | Val | Ser | Leu | Arg | Val | His | Gly        | Pro       | Tyr | Trp | Met |     |
| 15  |     |     |     |     | 20  |     |     |     |     | 25  |            |           |     |     | 30  |     |
| cac | ttc | tgc | ggg | ggc | tcc | ctc | atc | cac | ccc | cag | tgg        | gtg       | ctg | acc | gcc | 144 |
| His | Phe | Cys | Gly | Gly | Ser | Leu | Ile | His | Pro | Gln | Trp        | Val       | Leu | Thr | Ala |     |
|     |     |     | 35  |     |     |     |     |     | 40  |     |            |           |     | 45  |     |     |
| gcg | gcg | tgc | gtg | gga | ccg | gac | gtc | aag | gat | ctg | gcc        | gcc       | ctc | agg | gtg | 192 |
| Ala | Ala | Cys | Val | Gly | Pro | Asp | Val | Lys | Asp | Leu | Ala        | Ala       | Leu | Arg | Val |     |
|     |     |     | 50  |     |     |     |     | 55  |     |     |            |           | 60  |     |     |     |
| caa | ctg | cgg | gag | cag | cac | ctc | tac | tac | cag | gac | cag        | ctg       | ctg | ccg | gtc | 240 |
| Gln | Leu | Arg | Glu | Gln | His | Leu | Tyr | Tyr | Gln | Asp | Gln        | Leu       | Leu | Pro | Val |     |
|     |     | 65  |     |     |     |     | 70  |     |     |     |            | 75        |     |     |     |     |
| agc | agg | atc | atc | gtg | cac | cca | cag | ttc | tac | acc | gcc        | cag       | atc | gga | gcg | 288 |
| Ser | Arg | Ile | Ile | Val | His | Pro | Gln | Phe | Tyr | Thr | Ala        | Gln       | Ile | Gly | Ala |     |
|     | 80  |     |     |     |     | 85  |     |     |     |     | 90         |           |     |     |     |     |
| gac | atc | gcc | ctg | ctg | gag | ctg | gag | gag | ccg | gtg | aac        | gtc       | tcc | agc | cac | 336 |
| Asp | Ile | Ala | Leu | Leu | Glu | Leu | Glu | Glu | Pro | Val | Asn        | Val       | Ser | Ser | His |     |
| 95  |     |     |     |     | 100 |     |     |     |     | 105 |            |           |     |     | 110 |     |
| gtc | cac | acg | gtc | acc | ctg | ccc | cct | gcc | tca | gag | acc        | ttc       | ccc | ccg | ggg | 384 |
| Val | His | Thr | Val | Thr | Leu | Pro | Pro | Ala | Ser | Glu | Thr        | Phe       | Pro | Pro | Gly |     |
|     |     |     |     | 115 |     |     |     |     | 120 |     |            |           |     | 125 |     |     |
| atg | ccg | tgc | tgg | gtc | act | ggc | tgg | ggc | gat | gtg | gac        | aat       | gat | gag | cgc | 432 |
| Met | Pro | Cys | Trp | Val | Thr | Gly | Trp | Gly | Asp | Val | Asp        | Asn       | Asp | Glu | Arg |     |
|     |     |     | 130 |     |     |     |     | 135 |     |     |            |           | 140 |     |     |     |
| ctc | cca | ccg | cca | ttt | cct | ctg | aag | cag | gtg | aag | gtc        | ccc       | ata | atg | gaa | 480 |
| Leu | Pro | Pro | Pro | Phe | Pro | Leu | Lys | Gln | Val | Lys | Val        | Pro       | Ile | Met | Glu |     |
|     |     | 145 |     |     |     |     | 150 |     |     |     |            | 155       |     |     |     |     |
| aac | cac | att | tgt | gac | gca | aaa | tac | cac | ctt | ggc | gcc        | tac       | acg | gga | gac | 528 |
| Asn | His | Ile | Cys | Asp | Ala | Lys | Tyr | His | Leu | Gly | Ala        | Tyr       | Thr | Gly | Asp |     |
|     | 160 |     |     |     |     | 165 |     |     |     |     | 170        |           |     |     |     |     |
| gac | gtc | cgc | atc | gtc | cgt | gac | gac | atg | ctg | tgt | gcc        | ggg       | aac | acc | ccg | 576 |
| Asp | Val | Arg | Ile | Val | Arg | Asp | Asp | Met | Leu | Cys | Ala        | Gly       | Asn | Thr | Arg |     |
| 175 |     |     |     |     | 180 |     |     |     |     | 185 |            |           |     |     | 190 |     |
| agg | gac | tca | tgc | cag | ggc | gac | tcc | gga | ggg | ccc | ctg        | gtg       | tgc | aag | gtg | 624 |
| Arg | Asp | Ser | Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu        | Val       | Cys | Lys | Val |     |
|     |     |     |     | 195 |     |     |     |     | 200 |     |            |           |     | 205 |     |     |
| aat | ggc | acc | tgg | ctg | cag | gcg | ggc | gtg | gtc | agc | tgg        | ggc       | gag | ggc | tgt | 672 |
| Asn | Gly | Thr | Trp | Leu | Gln | Ala | Gly | Val | Val | Ser | Trp        | Gly       | Glu | Gly | Cys |     |
|     |     |     | 210 |     |     |     |     | 215 |     |     |            |           | 220 |     |     |     |
| gcc | cag | ccc | aac | cgg | cct | ggc | atc | tac | acc | cgt | gtc        | acc       | tac | tac | ttg | 720 |
| Ala | Gln | Pro | Asn | Arg | Pro | Gly | Ile | Tyr | Thr | Arg | Val        | Thr       | Tyr | Tyr | Leu |     |
|     |     | 225 |     |     |     |     | 230 |     |     |     |            | 235       |     |     |     |     |
| gac | tgg | atc | cac | cac | tat | gtc | ccc | aaa | aag | ccg | tgaagcggcc | gccgctcgt |     |     |     | 771 |
| Asp | Trp | Ile | His | His | Tyr | Val | Pro | Lys | Lys | Pro |            |           |     |     |     |     |
|     | 240 |     |     |     |     | 245 |     |     |     |     |            |           |     |     |     |     |

<210> 37  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 37

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

## 34506104.ST25.txt

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 38  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 38  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gca atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac 336  
 Ala Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432  
 Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg

|   |              |     |     |
|---|--------------|-----|-----|
| 130   | 135          | 140 |     |
| ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa |              |     | 480 |
| Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu |              |     |     |
| 145   | 150          | 155 |     |
| aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac |              |     | 528 |
| Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp |              |     |     |
| 160   | 165          | 170 |     |
| gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg |              |     | 576 |
| Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg |              |     |     |
| 175   | 180          | 185 | 190 |
| agg gac tca tgc cag ggc gac tcc gga ggg ccc ctg gtg tgc aag gtg |              |     | 624 |
| Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val |              |     |     |
| 195   | 200          | 205 |     |
| aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt |              |     | 672 |
| Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys |              |     |     |
| 210   | 215          | 220 |     |
| gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg |              |     | 720 |
| Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu |              |     |     |
| 225   | 230          | 235 |     |
| gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt |              |     | 771 |
| Asp Trp Ile His His Tyr Val Pro Lys Lys Pro                     |              |     |     |
| 240   | 245          |     |     |
| <br>  |              |     |     |
| <210>   | 39           |     |     |
| <211>   | 249          |     |     |
| <212>   | PRT          |     |     |
| <213>   | Homo sapiens |     |     |
| <br>  |              |     |     |
| <400>   | 39           |     |     |
| Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp |              |     |     |
| 1   | 5            | 10  | 15  |
| Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe |              |     |     |
|   | 20           | 25  | 30  |
| Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His |              |     |     |
|   | 35           | 40  | 45  |
| Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu |              |     |     |
|   | 50           | 55  | 60  |
| Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg |              |     |     |
| 65  | 70           | 75  | 80  |
| Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile |              |     |     |

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
180 185 190

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
245

<210> 40  
<211> 771  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (7)..(753)  
<223>

<400> 40  
gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc  
Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
1 5 10

48

## 34506104.ST25.txt

|   |     |
|---|-----|
| aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg | 96  |
| Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met |     |
| 15 20 25 30   |     |
| cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca | 144 |
| His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala |     |
| 35 40 45  |     |
| gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg | 192 |
| Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val |     |
| 50 55 60  |     |
| caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc | 240 |
| Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val |     |
| 65 70 75  |     |
| agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg | 288 |
| Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala |     |
| 80 85 90  |     |
| gac atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac | 336 |
| Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His |     |
| 95 100 105 110  |     |
| gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg | 384 |
| Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly |     |
| 115 120 125   |     |
| atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc | 432 |
| Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg |     |
| 130 135 140   |     |
| ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa | 480 |
| Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu |     |
| 145 150 155   |     |
| aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac | 528 |
| Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp |     |
| 160 165 170   |     |
| gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc ccg | 576 |
| Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg |     |
| 175 180 185 190   |     |
| agg gac tca tgt caa ggc gac gcc ggc gga cct ctg gtg tgc aag gtg | 624 |
| Arg Asp Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val |     |
| 195 200 205   |     |
| aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt | 672 |
| Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys |     |
| 210 215 220   |     |
| gcc cag ccc aac ccg cct ggc atc tac acc cgt gtc acc tac tac ttg | 720 |
| Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu |     |
| 225 230 235   |     |
| gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgtcgt | 771 |
| Asp Trp Ile His His Tyr Val Pro Lys Lys Pro                     |     |
| 240 245   |     |



<210> 41  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 41

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
 1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
 20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
 35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
 50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
 65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 42  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (7)..(753)  
 <223>

<400> 42  
 gggccc ctc gag aaa aga atc gtc ggg ggt cag gag gcc ccc agg agc 48  
 Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser  
 1 5 10

aag tgg ccc tgg cag gtg agc ctg aga gtc cac ggc cca tac tgg atg 96  
 Lys Trp Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met  
 15 20 25 30

cac ttc tgc ggg ggc tcc ctc atc cac ccc cag tgg gtg ctg acc gca 144  
 His Phe Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala  
 35 40 45

gcg cac tgc gtg gga ccg gac gtc aag gat ctg gcc gcc ctc agg gtg 192  
 Ala His Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val  
 50 55 60

caa ctg cgg gag cag cac ctc tac tac cag gac cag ctg ctg ccg gtc 240  
 Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val  
 65 70 75

agc agg atc atc gtg cac cca cag ttc tac acc gcc cag atc gga gcg 288  
 Ser Arg Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala  
 80 85 90

gac atc gcc ctg ctg gag ctg gag gag ccg gtg aac gtc tcc agc cac 336  
 Asp Ile Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His  
 95 100 105 110

gtc cac acg gtc acc ctg ccc cct gcc tca gag acc ttc ccc ccg ggg 384  
 Val His Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly  
 115 120 125

atg ccg tgc tgg gtc act ggc tgg ggc gat gtg gac aat gat gag cgc 432

## 34506104.ST25.txt

Met Pro Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg  
130 135 140

ctc cca ccg cca ttt cct ctg aag cag gtg aag gtc ccc ata atg gaa 480  
Leu Pro Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu  
145 150 155

aac cac att tgt gac gca aaa tac cac ctt ggc gcc tac acg gga gac 528  
Asn His Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp  
160 165 170

gac gtc cgc atc gtc cgt gac gac atg ctg tgt gcc ggg aac acc cgg 576  
Asp Val Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg  
175 180 185 190

agg gac tca tgc caa gga gac gcc ggc gga cca ctg gtg tgc aag gtg 624  
Arg Asp Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val  
195 200 205

aat ggc acc tgg ctg cag gcg ggc gtg gtc agc tgg ggc gag ggc tgt 672  
Asn Gly Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys  
210 215 220

gcc cag ccc aac cgg cct ggc atc tac acc cgt gtc acc tac tac ttg 720  
Ala Gln Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu  
225 230 235

gac tgg atc cac cac tat gtc ccc aaa aag ccg tgaagcggcc gccgctcgt 771  
Asp Trp Ile His His Tyr Val Pro Lys Lys Pro  
240 245

<210> 43  
<211> 249  
<212> PRT  
<213> Homo sapiens

<400> 43

Leu Glu Lys Arg Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp  
1 5 10 15

Pro Trp Gln Val Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe  
20 25 30

Cys Gly Gly Ser Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His  
35 40 45

Cys Val Gly Pro Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu  
50 55 60

Arg Glu Gln His Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg  
65 70 75 80

Ile Ile Val His Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile  
 85 90 95

Ala Leu Leu Glu Leu Glu Glu Pro Val Asn Val Ser Ser His Val His  
 100 105 110

Thr Val Thr Leu Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro  
 115 120 125

Cys Trp Val Thr Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro  
 130 135 140

Pro Pro Phe Pro Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His  
 145 150 155 160

Ile Cys Asp Ala Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val  
 165 170 175

Arg Ile Val Arg Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp  
 180 185 190

Ser Cys Gln Gly Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly  
 195 200 205

Thr Trp Leu Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln  
 210 215 220

Pro Asn Arg Pro Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp  
 225 230 235 240

Ile His His Tyr Val Pro Lys Lys Pro  
 245

<210> 44  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 44  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

## 34506104.ST25.txt

|   |     |
|---|-----|
| agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc | 96  |
| Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser |     |
| 20 25 30  |     |
| ctc atc cac ccc cag tgg gtg ctg acc gcc gcg gcg tgc gtg gga ccg | 144 |
| Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala Cys Val Gly Pro |     |
| 35 40 45  |     |
| gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac | 192 |
| Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His |     |
| 50 55 60  |     |
| ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac | 240 |
| Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His |     |
| 65 70 75 80   |     |
| cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag | 288 |
| Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu |     |
| 85 90 95  |     |
| ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg | 336 |
| Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu |     |
| 100 105 110   |     |
| ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act | 384 |
| Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr |     |
| 115 120 125   |     |
| ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct | 432 |
| Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro |     |
| 130 135 140   |     |
| ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca | 480 |
| Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala |     |
| 145 150 155 160   |     |
| aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt | 528 |
| Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg |     |
| 165 170 175   |     |
| gac gac atg ctg tgt gcc ggg aac acc ccg agg gac tca tgc cag ggc | 576 |
| Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly |     |
| 180 185 190   |     |
| gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag | 624 |
| Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln |     |
| 195 200 205   |     |
| gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct | 672 |
| Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro |     |
| 210 215 220   |     |
| ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat | 720 |
| Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr |     |
| 225 230 235 240   |     |
| gtc ccc aaa aag ccg   | 735 |
| Val Pro Lys Lys Pro   |     |

245

<210> 45  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 45

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala Ala Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln

195

200

205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 46  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 46  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15  
 agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
 gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gca atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

## 34506104.ST25.txt

ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140

ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160

aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175

gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc cag ggc 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190

gac tcc gga ggg ccc ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 47  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 47

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80



34506104.ST25.txt

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Ala Ile Ala Leu Leu Glu  
85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Phe Pro  
130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
180 185 190

Asp Ser Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
225 230 235 240

Val Pro Lys Lys Pro  
245

<210> 48  
<211> 735  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(735)  
<223>

<400> 48  
atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg  
Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val

## 34506104.ST25.txt

| 1   | 5   | 10  | 15  |     |
|---|-----|-----|-----|-----|
| agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc |     |     |     | 96  |
| Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser | 20  | 25  | 30  |     |
| ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg |     |     |     | 144 |
| Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro | 35  | 40  | 45  |     |
| gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac |     |     |     | 192 |
| Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His | 50  | 55  | 60  |     |
| ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac |     |     |     | 240 |
| Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His | 65  | 70  | 75  | 80  |
| cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag |     |     |     | 288 |
| Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu | 85  | 90  | 95  |     |
| ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg |     |     |     | 336 |
| Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu | 100 | 105 | 110 |     |
| ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act |     |     |     | 384 |
| Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr | 115 | 120 | 125 |     |
| ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct |     |     |     | 432 |
| Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro | 130 | 135 | 140 |     |
| ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca |     |     |     | 480 |
| Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala | 145 | 150 | 155 | 160 |
| aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt |     |     |     | 528 |
| Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg | 165 | 170 | 175 |     |
| gac gac atg ctg tgt gcc ggg aac acc ccg agg gac tca tgt caa ggc |     |     |     | 576 |
| Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly | 180 | 185 | 190 |     |
| gac gcc ggc gga cct ctg gtg tgc aag gtg aat ggc acc tgg ctg cag |     |     |     | 624 |
| Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln | 195 | 200 | 205 |     |
| gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac ccg cct |     |     |     | 672 |
| Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro | 210 | 215 | 220 |     |
| ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat |     |     |     | 720 |
| Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr | 225 | 230 | 235 | 240 |
| gtc ccc aaa aag ccg   |     |     |     | 735 |

Val Pro Lys Lys Pro  
245

<210> 49  
<211> 245  
<212> PRT  
<213> Homo sapiens

<400> 49

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
1 5 10 15

Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
20 25 30

Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
35 40 45

Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
50 55 60

Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
180 185 190

34506104.ST25.txt

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240

Val Pro Lys Lys Pro  
 245

<210> 50  
 <211> 735  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(735)  
 <223>

<400> 50  
 atc gtc ggg ggt cag gag gcc ccc agg agc aag tgg ccc tgg cag gtg 48  
 Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15  
 agc ctg aga gtc cac ggc cca tac tgg atg cac ttc tgc ggg ggc tcc 96  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
 ctc atc cac ccc cag tgg gtg ctg acc gca gcg cac tgc gtg gga ccg 144  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
 gac gtc aag gat ctg gcc gcc ctc agg gtg caa ctg cgg gag cag cac 192  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
 ctc tac tac cag gac cag ctg ctg ccg gtc agc agg atc atc gtg cac 240  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80  
 cca cag ttc tac acc gcc cag atc gga gcg gac atc gcc ctg ctg gag 288  
 Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
 85 90 95  
 ctg gag gag ccg gtg aac gtc tcc agc cac gtc cac acg gtc acc ctg 336  
 Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
 100 105 110  
 ccc cct gcc tca gag acc ttc ccc ccg ggg atg ccg tgc tgg gtc act 384  
 Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
 115 120 125

34506104.ST25.txt

ggc tgg ggc gat gtg gac aat gat gag cgc ctc cca ccg cca ttt cct 432  
 Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
 130 135 140  
  
 ctg aag cag gtg aag gtc ccc ata atg gaa aac cac att tgt gac gca 480  
 Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
 145 150 155 160  
  
 aaa tac cac ctt ggc gcc tac acg gga gac gac gtc cgc atc gtc cgt 528  
 Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
 165 170 175  
  
 gac gac atg ctg tgt gcc ggg aac acc cgg agg gac tca tgc caa gga 576  
 Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
 180 185 190  
  
 gac gcc ggc gga cca ctg gtg tgc aag gtg aat ggc acc tgg ctg cag 624  
 Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
 195 200 205  
  
 gcg ggc gtg gtc agc tgg ggc gag ggc tgt gcc cag ccc aac cgg cct 672  
 Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
 210 215 220  
  
 ggc atc tac acc cgt gtc acc tac tac ttg gac tgg atc cac cac tat 720  
 Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
 225 230 235 240  
  
 gtc ccc aaa aag ccg 735  
 Val Pro Lys Lys Pro  
 245

<210> 51  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 51

Ile Val Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val  
 1 5 10 15  
  
 Ser Leu Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser  
 20 25 30  
  
 Leu Ile His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro  
 35 40 45  
  
 Asp Val Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His  
 50 55 60  
  
 Leu Tyr Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His  
 65 70 75 80

Pro Gln Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu  
85 90 95

Leu Glu Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu  
100 105 110

Pro Pro Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr  
115 120 125

Gly Trp Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro  
130 135 140

Leu Lys Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala  
145 150 155 160

Lys Tyr His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg  
165 170 175

Asp Asp Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly  
180 185 190

Asp Ala Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln  
195 200 205

Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro  
210 215 220

Gly Ile Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr  
225 230 235 240

Val Pro Lys Lys Pro  
245

<210> 52  
<211> 275  
<212> PRT  
<213> Homo sapiens

<220>  
<221> VARIANT  
<222> (3)..(3)  
<223> Beta I and Beta II are N at this residue

<220>  
<221> VARIANT

<222> (23)..(23)  
<223> Beta I and Beta II are G at this residue

<220>  
<221> VARIANT  
<222> (28)..(28)  
<223> Beta I and Beta II are R at this residue

<220>  
<221> VARIANT  
<222> (29)..(29)  
<223> Beta I and Beta II are V at this residue

<220>  
<221> VARIANT  
<222> (51)..(53)  
<223> Beta I and Beta II are HGP at these residues

<220>  
<221> VARIANT  
<222> (76)..(76)  
<223> Beta I and Beta II are V at this residue

*Out*  
<220>  
<221> VARIANT  
<222> (85)..(85)  
<223> Beta I and Beta II are A at this residue

<220>  
<221> VARIANT  
<222> (115)..(116)  
<223> Beta I and Beta II are TA at these residues

<220>  
<221> VARIANT  
<222> (118)..(118)  
<223> Beta I and Beta II are I at this residue

<220>  
<221> VARIANT  
<222> (132)..(132)  
<223> Beta II is K at this residue

<220>  
<221> VARIANT  
<222> (133)..(133)  
<223> Beta I and Beta II are V at this residue

<220>

<221> VARIANT  
 <222> (136)..(136)  
 <223> Beta I and Beta II are H at this residue

<220>  
 <221> VARIANT  
 <222> (141)..(141)  
 <223> Beta I and Beta II are T at this residue

<220>  
 <221> VARIANT  
 <222> (168)..(168)  
 <223> Beta I and Beta II are R at this residue

<220>  
 <221> VARIANT  
 <222> (204)..(204)  
 <223> Beta I and Beta II are V at this residue

<220>  
 <221> VARIANT  
 <222> (215)..(216)  
 <223> Beta I and Beta II are TR at these residues

<220>  
 <221> VARIANT  
 <222> (221)..(221)  
 <223> Beta I and Beta II are Q at this residue

<220>  
 <221> VARIANT  
 <222> (245)..(245)  
 <223> Beta I and Beta II are G at this residue

<400> 52

Met Leu Ser Leu Leu Leu Leu Ala Leu Pro Val Leu Ala Ser Arg Ala  
 1 5 10 15

Tyr Ala Ala Pro Ala Pro Val Gln Ala Leu Gln Gln Ala Gly Ile Val  
 20 25 30

Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val Ser Leu  
 35 40 45

Arg Val Arg Asp Arg Tyr Trp Met His Phe Cys Gly Gly Ser Leu Ile  
 50 55 60



His Pro Gln Trp Val Leu Thr Ala Ala His Cys Leu Gly Pro Asp Val  
65 70 75 80

Lys Asp Leu Ala Thr Leu Arg Val Gln Leu Arg Glu Gln His Leu Tyr  
85 90 95

Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His Pro Gln  
100 105 110

Phe Tyr Ile Ile Gln Thr Gly Ala Asp Ile Ala Leu Leu Glu Leu Glu  
115 120 125

Glu Pro Val Asn Ile Ser Ser Arg Val His Thr Val Met Leu Pro Pro  
130 135 140

Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr Gly Trp  
145 150 155 160

Gly Asp Val Asp Asn Asp Glu Pro Leu Pro Pro Pro Phe Pro Leu Lys  
165 170 175

Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala Lys Tyr  
180 185 190

His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Ile Arg Asp Asp  
195 200 205

Met Leu Cys Ala Gly Asn Ser Gln Arg Asp Ser Cys Lys Gly Asp Ser  
210 215 220

Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Ala Gly  
225 230 235 240

Val Val Ser Trp Asp Glu Gly Cys Ala Gln Pro Asn Arg Pro Gly Ile  
245 250 255

Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr Val Pro  
260 265 270

Lys Lys Pro  
275